

REMARKS

This responds to the Final Office Action dated March 31, 2010.

No claims are amended, claims 2, 17, 24, and 28 have previously been canceled, and claims 30 and 31 are added; as a result, claims 1, 3-16, 18-23, 25-27, and 29-31 are now pending and subject to examination in this application.

The Rejection of Claims Under § 103

Claims 1, 3, 4, 6, 9-11, 13-16, 18, 19, 21, 23, 25, 26 and 29 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Zhang et al. (U.S. 7,027,513 B2).

Claims 5, 7, 8, 20, 22 and 27 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Zhang et al. (U.S. 7,027,513 B2) in view of Ma et al. (U.S. 20040088723 A1).

Claim 7 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Zhang et al. (U.S. 7,027,513 B2) in view of Sull et al. (U.S. 20060064716 A1).

The Applicant respectfully traverses these rejections.

The Applicant respectfully submits that the claims are allowable over the references of record. Zhang relates to a system that determines motion vectors for each frame of a video sequence. The motion vectors reflect the magnitude and direction of the motion of macro blocks of a frame. The average magnitude of motion vectors within a frame are calculated, and a dominant motion direction percentage is calculated, which represents the spatial motion consistency of a frame. Thereafter, a perceived motion energy is calculated, using the average magnitude of motion vectors and the percentage of dominant motion direction. Then, a series of triangles is constructed from the perceived motion energy. The triangles represent motion variation patterns, such as motion acceleration followed by motion deceleration.

The claims recite determining a rate that is a function of a displacement value for each moved pixel between a current frame and a first frame, and between the first frame and a second frame. If the calculated rate exceeds a threshold value, the associated frames are identified as key frames.

The Applicant respectfully submits that the Zhang reference and the claimed subject matter are directed to two different systems or methods. That is, Zhang goes through a multi-step process to construct a series of triangles, uses the apexes of the triangles to determine motion variation patterns (*i.e.*, acceleration and deceleration), and then identifies key frames via the triangles and associated motion patterns. In contrast, the claimed subject matter determines displacement values between pixels of a sequence of frames, and identifies key video frames by determining if the displacement values exceed a threshold. Since the Zhang reference fails to disclose all the features of the claimed subject matter, and further since Zhang and the claims are directed to two different and distinct systems, the Applicant respectfully submits that a *prima facie* case of obviousness has not been established, and the Applicant respectfully requests a notice indicating the allowability of the claims.

The Applicant has added new claims 30 and 31. Claims 30 and 31 are directed to an embodiment as disclosed in ¶¶ [0046] to [0058] of the Applicant's specification. The Applicant respectfully submits that new claims 30 and 31 are allowable over the references of record for reasons that are similar to the reasons discussed above for the other claims in the application.

Specifically, claim 31 recites a process of calculating an average square of displacement values for first, second, and third frames, a rate of change between the second and third frames using the average square values, and then identifying key video frames by comparing the averaged squares to a first threshold and the rate of change to a second threshold. The Applicant respectfully submits that this process is not disclosed in the Zhang reference, and respectfully requests a notice that claims 30 and 31 are allowable.

Claim 5 recites that the "first threshold and said second threshold are adjusted dynamically to ensure that a desired number of frames are selected as key video frames in a specified duration." Claims 20 and 27 recite substantially similar features. The Office Action admits that Zhang does not disclose this feature, but contends that ¶ [0081] of the Ma reference does. The Applicant respectfully disagrees.

Paragraph [0081] of the Ma reference only relates to determining a region that is most attractive to human attention by binarizing a saliency map. The size, position, and brightness of the regions of the binarized saliency map determine the degree of human attention attracted. The Applicant respectfully submits that this is not a disclosure of thresholds that are dynamically adjusted so that a desired number of frames are selected as key frames. For this additional reason, the Applicant respectfully submits that a *prima facie* case of obviousness has not been established for claims 5, 20, and 27, and the Applicant respectfully requests the withdrawal of the rejection of these claims.

CONCLUSION

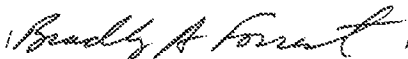
The Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone the undersigned at (612) 373-6972 to facilitate prosecution of this application.

If necessary, please charge any additional fees or deficiencies, or credit any overpayments to Deposit Account No. 19-0743.

Respectfully submitted,

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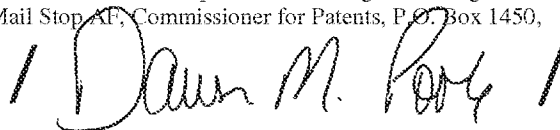
Date 26 May 2010

By 
Bradley A. Forrest
Reg. No. 30,837

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 26th day of May, 2010.

DAWN M. POOLE

Name


Signature